

APPLICATION

FOR UNITED STATES LETTERS PATENT

SPECIFICATION

TO ALL WHOM IT MAY CONCERN:

BE IT KNOWN THAT I, **BRENDA THORNTON**, a citizen of the United States of America, have invented new and useful improvements in a KIT FOR MAKING RUBBINGS of which the following is a specification:

KIT FOR MAKING RUBBINGS

BACKGROUND

The present invention is directed to an educational tool for creating printed images on paper or another similar medium by transferring the image of a pre-selected object or objects onto the paper using a rubbing process. The educational tool is a kit for making prints of selected images and includes a rubbing board, markers and rubbing objects. To transfer an image using the kit of the present invention, a selected rubbing object is arranged on the rubbing board and a sheet of paper is positioned over the rubbing object. A marker, pressed onto the paper, is moved back and forth across the rubbing object and the image is rubbed onto the paper.

As children grow up, it is desirable to engage them in activities which develop their basic motor skills. When such development can be done as a game for fun, teaching and learning becomes an easier task for both teacher and student. Adults with handicaps or limited physical abilities can also benefit from activities or exercises which can develop their motor skills. While such exercises exist, they may not be engaging or entertaining enough to assure that the activity is enthusiastically received and performed.

In addition to developing motor skills, it is essential to encourage and nurture creativity in both children and adults. Creative activities can enhance self esteem and foster cognitive abilities in individuals.

Another aspect of childhood education includes teaching form recognition. Generally, teaching form recognition is dull and repetitive, thereby creating an uninspired learning environment for a child. Such educational techniques can discourage the student who might otherwise be eager to participate in the learning process. Conversely, the

student who is inspired to learn can be highly motivated to seek educational opportunities on their own.

The kit of the present invention provides means for developing motor skills which is entertaining and engaging for the user. Through repeated use of selectively shaped objects when making rubbings, the student's form recognition abilities can be improved. By allowing the user to create different rubbed images using different objects, arrangements and colors, his or her creativity can be greatly enhanced.

All of the elements necessary to do a rubbing are contained within the kit and can be readily accessed during use. The kit is portable and can be easily transported, set up and used almost anywhere.

SUMMARY

The present invention is directed to a kit for producing images on paper by a rubbing technique. The kit includes a plurality of markers, a rubbing board and rubbing objects. The markers and rubbing objects can be stored within the rubbing board along with paper onto which the rubbing images are transferred. The rubbing board includes a work surface for supporting the rubbing objects and paper when making the rubbings. To make a rubbing using the kit, one or more rubbing object is arranged on the rubbing surface as desired; a sheet of paper is placed over the rubbing object; and one or more marker is placed on the paper and drawn over the rubbing object(s). The image of a bas relief pattern on the rubbing object(s) is transferred to the paper by the marker(s).

It is an object of the present invention to provide an educational tool to enhance creativity skills of the user.

It is a further object of the present invention to provide an educational tool that develops motor skills of the user.

It is a further object of the present invention to provide a device that presents an activity or entertainment for children and others.

It is a further objective of the present invention to provide an appliance for making colored rubbings.

It is a further object of the present invention to provide a device to facilitate the manufacture of selectively interchangeable designs on paper.

It is a further object of the present invention to provide a device for making rubbings that can be used with a standard sized sheet of paper.

It is a further object of the present invention to provide an apparatus for producing selected designs on a sheet of paper.

It is a further object of the present invention to provide an amusement device that enhances motor skills.

It is a further object of the present invention to provide a marking device that is easy to manipulate by one having limited motor skills.

BRIEF DESCRIPTION OF THE DRAWINGS

Reference is made to the accompanying drawings in which are shown illustrative embodiments of the invention and from which novel features and advantages will be apparent.

Figure 1 is a top perspective view of a preferred embodiment of the kit for making rubbings of the present invention.

Figure 2 is an exploded view of the kit of Figure 1.

Figure 3 is a perspective view of the rubbing board of Figure 1 shown in an open configuration.

Figure 4 is a perspective view of the kit of Figure 1 with the cover shown in a raised position.

Figure 5 is an exploded view showing the rubbing board, rubbing objects, sheet of paper and marker of Figure 1 in position to make a rubbing.

Figure 6 is partial side view of the top and bottom portions of the kit taken along line A-A in Figure 1 showing the first and second latching parts of the closure fastener.

Figure 7 is a side view of one of the markers of the preferred embodiment of Figure 1 with a portion of the element holder removed.

Figure 8 is a partial side view of first recesses in the top portion of the rubbing board taken along line B-B in Figure 5.

Figure 9 is a top perspective view of the element holder of Figure 1.

Figure 10 shows a user making a rubbing with the kit of Figure 1.

Figure 11 is a partial exploded view of the rubbing board in Figure 1 showing the first hinge.

Figure 12 is a partial side view of the rubbing board taken along line C - C in Figure 1.

DETAILED DESCRIPTION

Referring to the drawings, there is shown in Figures 1 and 2 a preferred embodiment of the present invention comprising a kit **1** for making rubbings. The kit **1** includes a rubbing board **10**, a plurality of markers **11** and a plurality rubbing objects **12**.

The rubbing board **10** comprises top **13** and bottom **14** portions pivotally attached to each other by a first hinge **15**. The first hinge **15** as shown in Figure 11 includes first **50** and second **51** interengaging pieces disposed respectively on the top **13** and bottom **14** portions. On the top portion **13**, the first interengaging pieces **50** are a pair of ears **52**. On the bottom portion **14**, the second interengaging pieces **51** include a pair of ports **53** each of which are adapted to receive an ear **52** therein. Each port **53** has a hole **54** therethrough, while each of the ears **52** includes a button **55** that is pivotally held in the hole **54** of the respective port **53**.

Referring back to Figures 1 and 2, the top portion **13** of the rubbing board **10** comprises a tray **17** having a marker holder **18** and a rubbing object holder **19** formed therein. The marker holder **18** comprises a plurality of first recesses **20**, while the object holder **19** comprises a plurality of second recesses **21**. Resilient projections **23** are disposed in each of the first recesses **20** of the marker holder **18**. A depression **22** having a sidewall **62** is also formed on the top portion **13**. The depression **22** contains the second recesses **21**.

The top portion **13** further comprises a cover **24** and a cover fastener **26**. The cover **24** is a planar member that is pivotally attached to the tray **17** by a second hinge **25**. The planar member has first **27** and second **28** surfaces with the first surface **27** being a work surface on which the rubbings are made.

The bottom portion **14** of the rubbing board **10** is characterized by upper **29** and lower **30** surfaces. The upper surface **29** has a storage area which comprises a third recess **31**. The lower surface **30** of the rubbing board **10** preferably rests on a supporting surface, such as a table or the user, during use.

A handle **32** is formed in the top **13** and bottom **14** portions of the rubbing board **10**. The handle **32** includes a top part **33** disposed on the top portion **13** of the rubbing board **10** and a bottom part **34** disposed on the bottom portion **14** of the rubbing board **10**.

The closure fastener **16**, as shown in Figure 6, releasably holds the top **13** and bottom **14** portions together. When the closure fastener **16** is engaged, no substantial pivotal movement occurs between the top **13** and bottom **14** portions. The closure fastener **16** comprises first **35** and second **36** latching parts. The first latching part **35** is a resilient finger on the top portion **13** that extends downwardly from an outer edge of the tray **17**. The second latching part **36** is an indentation on an outer edge of the bottom portion **14** of the rubbing board **10**. The resilient finger of the first latching part **35** is adapted to overlap the outer edge of the bottom portion **14** and snap fit into the indentation of the second latching part **36** to releasably engage and lock the closure fastener **16**. Although the closure fastener **16** of the preferred embodiment comprises a resilient latch, other types of suitable fasteners, including buckles, male/female fasteners and clips could be used instead.

The rubbing board **10** comprises closed and opened configurations as shown in Figures 1 and 3, respectively. In the closed configuration of Figure 1, the top **13** and bottom **14** portions extend adjacently to each other such that a lower surface of the tray **17** is next to an upper surface **29** of the bottom portion **14**. When the rubbing board **10** is in

the closed configuration, the closure fastener **16** is engaged; the third recess **31** on the bottom portion **14** is covered by the top portion **13**; and stored items, such as paper, are protected. The closure fastener **16** secures the top **13** and bottom portions **14** against pivotal movement in the closed configuration.

In the opened configuration of Figure 3, the top **13** and bottom **14** portions extend angularly away from each other, making the third recess **31** readily accessible. In addition, the first **35** and second **36** latching parts of the closure fastener **16** are not engaged.

Referring to Figures 7 and 9, the marker **11** includes a writing element **48** and an element holder **38**. Preferably, the writing element **48** is a crayon **37**, although other types of suitable writing elements could be used instead. The writing element **48** has a free end **46** and an attached end **47**. The element holder **38** comprises a body **39** with a receptacle **40** and a marker handle **41**. A lip **43** extends around an outer circumference of the body **39**. The writing element **48** is held within the receptacle **40** by a gripping means for removably gripping the writing element **48** within the receptacle **40** of the body **39**. The gripping means comprises a plurality of teeth **42** disposed inside of the receptacle **40**. A pair of slots **60** in the body **39** flank the marker handle **41**. The slots **60** facilitate the removal of the element holder **38** from a mold during the manufacturing process.

In Figure 2, each rubbing object **12** has front **44** and back **45** surfaces. The front surface **44** includes a bas relief pattern such as a raised design for rubbing. A frictional engagement occurs between the back surface **45** of the rubbing object **12** and the first surface **27** of the cover **24**. The frictional engagement deters relative movement between the rubbing object **12** and the cover **24** when the rubbing object **12** is positioned on the

first surface 27. This holds the rubbing object 12 in place on the first surface 27 of the cover 24 while a rubbing is made.

In a preferred embodiment, the marker 11 is generally cylindrically shaped with a U-shaped marker handle 41 located on one end of the marker 11. The writing element 48 has a circular cross section and the shape of the receptacle 40 coincides with that circular cross section in order that the writing element 48 fit snugly therein. To facilitate receiving and storing the markers 11, the first recesses 20 of the marker holder 18 are also circular in cross section. Other suitable cross sectional shapes for the writing element 48 and receptacle 40 may be used instead. Were the writing element 48 and receptacle 40 to have a cross section other than circular, the first recesses 20 would preferably coincide with that cross sectional shape.

The rubbing board 10 preferably has a rectangular shape with a generally flattened profile to facilitate not only transporting, but also using and storing the kit. The cover 24 on the rubbing board 10 is rectangular and is only slightly larger than the size of a standard sheet of paper 100 (8.5" x 11"). Preferably, the depression 22 on the top portion 13 is only slightly larger than the dimensions of the cover 24 so that when using a standard sheet of paper to make a rubbing, the paper will be closely bound by the sidewalls 62 of the depression 22. The dimensions of the cover 24 and depression 22 readily accommodate a standard size sheet of paper, but could be varied in size as desired to fit other sized sheets of paper. Although, any size sheet of paper could be used with the kit 1, it is preferable that the paper be about the same size as the depression 22 in order to deter the paper from sliding when making a rubbing.

Each of the rubbing objects **12** is generally planar with the front surface **44** having the raised design of the bas relief pattern. The shapes and designs of each rubbing object **12** can vary as desired to include letters, numbers, animate and inanimate objects and other concrete or abstract forms.

In a preferred embodiment, the crayon **37** comprising the writing element **48** is made of a wax-based medium with a color pigment additive. The wax-based medium is manufactured by the Dixon Ticonderoga Company located in Heathrow, Florida. Each of the crayons **37** in the kit can be a different color. Although a wax based crayon is preferable, other suitable types of materials, such as lead, chalk or charcoal could be used in lieu of the wax-based medium for the writing element **48**.

The element holder **38** and the rubbing board **10** are made of high density plastic, while the rubbing objects **12** are made of soft plastic. The soft plastic of the latter has a durometer of less than that of the element holder **38** and the rubbing board **10**. The consistency of the soft plastic creates the frictional engagement between the rubbing objects **12** and the first surface **27** of the cover **24**.

Preferably, the element holder **38** and rubbing board **10** are made of Alathon H 5112, a high density polyethylene having a durometer of about 68. It is manufactured by Equistar Chemicals LP located in Houston, Texas. The rubbing objects **12** are preferably made of Ultrathene UE 685-009, an ethylene vinyl acetate which is also manufactured by Equistar Chemicals LP.

While polyethylene is preferred, other suitable materials could be used instead, such as fiberglass and lightweight composites, to make the rubbing board **10** and element

holder **38**. In addition to using soft plastics for making the rubbing objects **12**, other suitable materials, including rubber, could be used instead.

The rubbing board **10** is a work station and a storage/carrying case. It stores markers **11**, rubbing objects **12** and paper **100**. Each of the first recesses **20** in the tray **17** can hold a marker **11** as shown in Figure 8. The lip **43** on the body **39** of the marker **11** and the resilient projections **23** in the first recesses **20** of the marker holder **18** cooperate to form retaining means for releasably retaining the marker **11** in the marker holder **18**. The retaining means releasably secures each marker **11** in a respective first recess **20** of the marker holder **18**.

In Figure 3, the third recess **31** which is disposed in the bottom portion **14** is a storage area for holding paper **100**. It can also be used to store finished rubbings and/or other accessories. In the closed configuration, the top portion **13** fits over the bottom portion **14** and substantially covers the third recess **31**. With the third recess **31** covered by the top portion **13**, the paper **100** positioned in the third recess **31** is secured against inadvertent removal.

The cover **24** on the rubbing board **10** limits access to the second recesses **21** on the tray **17** and further comprises lowered and raised positions. Referring to Figure 1 with the cover **24** in a lowered position, the cover **24** is held within the confines of the depression **22** and the cover fastener **26** is engaged. In this position, the cover **24** extends across an upper surface of the top portion **13** and covers the second recesses **21** of the rubbing object holder **19**. With the second recesses **21** closed, the stored rubbing objects **12** are retained within the object holder **19**.

To move the cover **24** into the raised position as shown in Figure 4, the cover fastener **26** is disengaged as the cover **24** is pivoted in a direction that is up and away from the depression **22** and tray **17**. With the cover **24** in the raised position, the rubbing objects **12** stored in the second recesses **21** are accessible.

The cover **24** also serves as a work surface for doing rubbings, as shown in Figures 5 and 10. As part of the process, selected rubbing objects **12** are arranged on the first surface **27** of the cover **24** and then the paper **100** is placed over the arranged rubbing objects **12** on the cover **24**. The back surface **45** of each rubbing object **12** frictionally engages the first surface **27** of the cover **24**. This frictional engagement substantially reduces unwanted movement of the rubbing objects **12** on the cover **24** during use. Reducing movement of the rubbing objects **12** during the rubbing process is advantageous for producing a crisp, clear image on the paper **100**.

The rubbing board's handle **32** provides means for carrying the kit **1**. The top **33** and bottom **34** parts of the handle **32** are disposed adjacently to each other when the rubbing board **10** is in the closed configuration. The top **33** and bottom **34** parts are held adjacent to each other when the kit **1** is carried by its handle **32**. This arrangement helps to maintain the top **13** and bottom **14** portions of the rubbing board **10** in the closed configuration during transport. In addition, each of the top **33** and bottom **34** parts of the handle **32** can be grasped individually to manipulate the respective top **13** and bottom **14** portions, especially when moving the rubbing board **10** between open and closed configurations.

The marker **11** transfers the bas relief pattern from the front surface **44** of the rubbing object **12** onto the paper **100**. The marker handle **41** provides means for a user to

grip the marker **11**, especially when removing it from the marker holder **18** and when making a rubbing. By holding and manipulating the marker **11** using the handle **41**, the user can avoid getting pigment from the writing element **48** on his or her hands when making a rubbing.

The cover fastener **26** in Figures 10 and 12 includes a pair of protrusions **58** on the sidewall **62** of the depression **22** to releasably secure the cover **24** in the lowered position. The protrusions **58** extend into the depression **22** slightly more than the shortest distance between an outer edge **61** of the cover **24** and the sidewall **62**. As the cover **24** is moved from the raised position to the lowered position, the outer edge **61** snaps over the protrusions **58** thereby engaging the cover fastener **26** and releasably holding the cover **24** in the lowered position. The resultant engagement retains the cover **24**, as shown by the solid lines of Figure 12, within the depression **22**. To move the cover **24** from the lowered position to the raised position, the cover **24** is pivoted away from the tray **17**. The outer edge **61** is forced to snap over the protrusions **58**, thereby disengaging the cover fastener **26** and moving the cover **24**, as shown by the dotted lines in Figure 12, into the raised position. Although a snap fitting engagement is shown herein, other suitable releasable fasteners could be used in lieu of the protrusions of the present embodiment to secure the cover. Other suitable fasteners could include resilient clips and interengaging fasteners.

A pair of notches **59** in the top of the tray **17** provide access to the edge **61** of the lowered cover **24** to facilitate lifting the cover **24** from the lowered position. Each of the notches **59** are confluent with the sidewall **62** of the depression **22** and are adjacent to the

protrusions **58**. In addition, the notches **59** extend deeper into the tray than the depression **22**.

When not in use, the markers **11** can be stored in the marker holders **18** as shown in Figure 8. Each one of the markers **11** can be fitted into a respective first recess **20**. The lip **43** extending around the body **39** of the marker **11** cooperates with the resilient projections **23** in the first recesses **20** of the marker holder **18**. The resilient projections **23** snap fit over the lip **43** when a marker **11** is fully inserted into a first recess **20** to hold the marker **11** therein. When the marker **11** is removed, the resilient projections **23** snap back over the lip **43** thereby releasing the marker **11** from the first recess **20**.

Referring to Figure 7, the gripping means is a plurality of teeth **42** disposed on the interior of each receptacle **40** of a respective marker **11**. Each tooth **42** engages an outside surface of the writing element **48** to hold it in the receptacle **40**. Preferably, each receptacle **40** has a pair of teeth **42** that are disposed opposite to each other. Each tooth **42** is adapted to dig into the surface of the writing element **48** as it is inserted into the receptacle **40**.

In a preferred embodiment, the writing element **48** is sized to fit within the receptacle **40** of the body **39**. Similarly, the element holder **38** is sized to receive a marker **11** therein. The rubbing board **10** is of a size for portability and convenience. Preferably, it is about 13" x 16" x 2". The cover **24** is approximately 8 ½" x 11" and can accommodate a standard sized sheet of paper. Each of the second recesses **21** of the object holders **19** is larger in dimension than the associated rubbing objects **12** in order that the objects **12** fit within the second recesses **21**. The depression **22** in the tray **17** is sized so that the cover **24** will fit into the depression **23**.

The markers **11** are stored in the marker holder **18** with each marker **11** being held in a respective first recess **20**. When a marker **11** is fully inserted into a first recess **20**, the resilient projections **23** extend outwardly over the lip **43** on the marker **11**. Using a force great enough to overcome the resistance of the resilient projections **23**, the marker **11** can be repeatedly removed from and inserted into a first recess **20**. As the marker **11** moves into or out of the first recess **20**, the lip **43** pushes the resilient projections **23** inwardly as it passes the projections **23**. The projections **23** return to a relaxed, outwardly extending position when the lip **43** has passed thereby. Once removed from the first recess **20**, the marker **11** is ready for use.

The rubbing objects **12** are stored in the second recesses **21** of the object holder **19**. To retrieve rubbing objects **12**, the rubbing board **10** is moved to an opened configuration so that the second recesses **21** are accessible and the rubbing objects **12** can be selectively removed therefrom. Once the rubbing objects **12** are removed, the rubbing board **10** is moved to the closed configuration and the selected rubbing objects **12** are arranged on the cover **24** with their back surfaces **45** positioned adjacent to the first surface **27** and the bas relief pattern on the front surface **44** facing away from the cover **24**. Positioned, thusly, the rubbing objects **12** are ready for making a rubbing.

The marker handle **41** is attached to one end of the body **39**, while the receptacle **40** opens from the opposite end of the body **39**. The attached end **47** of the writing element **48** is fitted into the receptacle **40**, while the free end **46** extends outwardly from the body **39** opposite the handle **41**. When making a rubbing, the free end **46** of the writing element **48** is placed adjacent to the paper **100**. Markings from the free end **46** are then rubbed onto the paper **100**.

When making a rubbing, the cover **24** of the rubbing board **10** is in the lowered position and the rubbing board **10** is in the closed configuration. Preferably, the rubbing board **10** is positioned in a generally horizontal position with the first surface **27** of the cover **24** being accessible to the user as shown in Figure 10. The rubbing board **10** can be positioned on various supporting surfaces for use, including desks, tables, countertops, seats and floors. It can also be held by the user. The rubbing objects **12** are placed on the first surface **27** and the paper **100** is positioned over the rubbing objects **12**.

To facilitate selection of a desired marker **11**, the color of the element holder **38** can coincide with the color of its respective crayon **37**. When not in use, the markers **11** are stored in the marker holder **18** with the handles **41** facing outwardly to give a user easy access to the markers **11**. The first recesses **20** of the marker holder **18** extend down opposite sides of the tray **17**. This location provides a user with high visibility and easy access to the markers **11**. If desired, the marker holder **18** could be positioned in other areas on the rubbing board **10** instead.

Referring to Figure 3, the first hinge **15** on the rubbing board **10** is situated along the adjacent edges of the top **13** and bottom **14** portions. The closure fastener **16** is located along a side of the top **13** and bottom **14** portions that is disposed opposite to the first hinge **15**. The handle **32** is located on the same side of the rubbing board **10** as the closure fastener **16** is located.

To make a rubbing using the kit of the present invention, the top **13** and bottom **14** portions are moved from the closed configuration to the open configuration thereby allowing access into the third recess **31**. Paper **100** stored in the third recess **31** is removed from the bottom portion **14** and the rubbing board **10** is returned to the closed

configuration. With the cover **24** in the raised position to reveal the rubbing objects **12** stored in the second recesses **21**, at least one rubbing object **1** is selected and removed from the tray **17**. The cover **24** is returned to the lowered position within the depression **22**. The rubbing object(s) **12** is positioned in a desired manner on the first surface **27** of the cover **24** with the back surface **45** of the rubbing object **12** adjacent to the first surface **27**. Once the object(s) **12** is positioned to the user's preference, a sheet of paper **100** is placed over the cover **24** within the depression **22**, to rest directly on the front surface **44** of the selectively positioned rubbing object(s) **12**. A marker **11** is selected and removed from the marker holder **18**. The marker **11** is placed on top of the paper **100** with its free end **46** touching the paper **100**. Maintaining a slight downward pressure, the marker **11** is rubbed over the surface of the paper **100**, as well as over the desired rubbing object(s) **12** situated under the paper **100**. As the marker **11** is moved across the paper **100**, an image of the bas relief pattern on the front surface **44** of the rubbing object **12** is transferred to the paper **100** by the writing element **48**. This process may be repeated with different markers and/or rubbing objects, if desired.

Variations and combinations for making the rubbed images are possible. For example, additional images can be made one on top of the other by using a different rubbing object or changing the combination of rubbing objects on the rubbing board to make the rubbing. A single color or different colors can also be used to create a desired image on a sheet of paper. By using more than one marker, the different colors can create multi-colored images on a single sheet of paper.

The kit for making rubbings is an educational tool that enhances creativity by enabling the production of an almost unlimited number of images by using different

colors and rubbing objects all of which can be selected by the user. Since a certain degree of coordination and dexterity are required to make rubbings, the present invention can enhance and improve the motor skills of a user. The kit is easy to use and is portable with the supplies needed to make rubbings contained therein.

In an alternate embodiment, the rubbing object is positively held on the cover by a magnetic force. A magnet or magnetized particles are disposed within the rubbing object and the cover on the top portion of the rubbing board is made of a magnetically attractive material. A magnetic attraction between the magnet in the rubbing object and the magnetically attractive material of the cover secures the rubbing object to the work surface.

In another alternate embodiment, the materials comprising the cover and the rubbing objects are such that an electrostatic force is created between the back surface of the rubbing objects and the first surface of the rubbing board's cover. The resulting electrostatic force creates an adhesion that holds the selected rubbing objects in place on the cover.

Although the present invention has been described in considerable detail with reference to certain preferred versions thereof, other versions are possible. Therefore, the spirit and scope of the appended claims should not be limited to the description of the preferred versions contained herein.